



A.D. 1870, *23rd JULY.* N° 2074.

S P E C I F I C A T I O N

OF

WILLIAM JAMES JOHNSON.

APPARATUS FOR CONDENSING FUMES
AND SMOKE.

LONDON:

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1871.



A.D. 1870, 23rd JULY. N° 2074.

Apparatus for Condensing Fumes and Smoke.

LETTERS PATENT to William James Johnson, of Allendale, in the County of Northumberland, for the Invention of “**IMPROVEMENTS IN APPARATUS FOR CONDENSING METALLIC AND OTHER FUMES, GASES, AND SMOKE.**”

Sealed the 15th September 1870, and dated the 23rd July 1870.

(Void by reason of the Patentee having neglected to file a Specification in pursuance of the conditions of the Letters Patent.)

PROVISIONAL SPECIFICATION left by the said William James Johnson at the Office of the Commissioners of Patents, with his Petition, on the 23rd July 1870.

I, WILLIAM JAMES JOHNSON, of Allendale, in the County of Northum-
5 berland, do hereby declare the nature of the said Invention for “**IM-
PROVEMENTS IN APPARATUS FOR CONDENSING METALLIC AND OTHER FUMES, GASES,
AND SMOKE,**” to be as follows:—

This Invention has for its object improvements in apparatus for con-
densing metallic and other fumes, gases, and smoke. At the present
10 time great loss and injury result from the escape into the air of metallic

Johnson's Apparatus for Condensing Fumes and Smoke.

acid, and other fumes or smoke. I condense such fumes more effectually than heretofore by the use of a tank or reservoir containing water and closed at the top. Within the tank or reservoir are a number of fans driven at a suitable velocity to produce a draft through the apparatus. The tank or reservoir is divided by partitions so as to form a chamber 5 for each fan. The first fan of the series draws in the fumes around its axis on either side, and discharges them at its circumference, passing them on to the next fan, by which they are similarly carried forward, and so on for as many fans as the apparatus contains. The blades of the fans dip into the water in the tank or reservoir and throw it up in 10 a spray or shower. The spray or shower from each fan falls on a grating with zig-zag passages through it, this grating separates one fan chamber from the next and the fumes as they pass through it come into close contact with the water running back through the grating. When the water in the tank or reservoir becomes sufficiently charged 15 with the fumes it is run off for use according to the nature of the fumes condensed, and fresh water is run into the apparatus, or in some cases when the object of the use of the apparatus is simply to prevent the escape of noxious fumes the water when charged may be run away to waste. Any gas soluble in water may be thus condensed. 20

In some cases in place of using water only in the apparatus, absorbent matters adapted to the nature of the gas or fume to be absorbed may be added to the water.

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